

L7 ANSWER 3 OF 29 CAPLUS COPYRIGHT 2003 ACS  
AN 1974:523697 CAPLUS  
DN 81:123697  
TI Phenomenon of the caking of **potash**  
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I. Mendeleeva (1973), 73, 21-3  
CODEN: TMKIAT; ISSN: 0320-3220  
DT Journal  
LA Russian

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AB During absorption of moisture by calcined **potash**, the change of interplanar distances corresponds to the formation of the crystal hydrate  $K_2CO_3 \cdot 1.5H_2O$ . The x-ray diagram of **potash** samples kept in air revealed diffraction lines indicating the formation of  $KHCO_3$ , owing to absorption of  $CO_2$  and  $H_2O$ . When moisture is absorbed by calcined **potash**, the latter is quickly transformed into the crystal hydrate, water is bound chem., and the product preserves its free-flowing property and does not cake. This phenomenon continues until all the calcined **potash** is converted to  $K_2CO_3 \cdot 1.5H_2O$ . The water further absorbed is not bound and remains in the **potash** as **hygroscopic** water. From then on, a variation in temp. and moisture of the surrounding air results in a redn. of the free-flowing properties of **potash** and it begins to cake.